## REMARKS/ARGUMENTS

Claims 69-74 and 78-96 are pending and presented for examination. Claims 75-77 have been canceled. Previously, claims 1-68 were canceled. Claims 79-96 have been added. Specifically, claims 69-78 were rejected in the Office Action mailed April 6, 2007. Among these rejected claims, claims 75-77 have been canceled without prejudice in any manner. None of the remaining claims 69-74 and 78 have been amended. Reconsideration is respectfully requested.

### Claim Rejections under 35 U.S.C. § 112

Claims 71 and 78 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner states:

> Claim 71 recites, "the first backplane and the second backplane are the same; the first base card and the second base card are the same". Claim 78 recites, "the first backplane and the second backplane are the same". These limitations were not disclosed in the specification and therefore, are considered new matter.

Office Action mailed April 6, 2007, page 3. Applicant respectfully traverses the Examiner's rejections for the following reasons.

A. Claim Limitations Are Supported by the Specification

According to MPEP, § 2163, "[a]n applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention." (citing Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997)) (emphasis added).

For claim limitations "the first backplane and the second backplane are the same", the written description can be found at least at pages 6-8 and Figures 5-6 of the specification. As shown in Figure 5, two transfer cards 30 are coupled to two circuit cards 10 respectively through at least the same backplane 4 according to an embodiment of the present invention. Also, as shown in Figure 6, a framework 80 can include multiple transfer cards 30 and circuit cards 10,

the transfer cards 30 being coupled to the circuit cards 10 through at least the same backplane according to an embodiment of the present invention. Additional support for these claim limitations are also provided on at least pages 6-8 of the specification.

Therefore, the claim limitations "the first backplane and the second backplane are the same" are fully supported by the specification.

Additionally, for clam limitations "the first base card and the second base card are the same", the written description can be found at least at Figure 7 and page 8 of the specification. As shown in Figure 7, two transfer cards 30 share the same base cards 60 according to an embodiment of the present invention. Also at page 8 of the specification, it is stated:

> Many interface transfer cards 30 in miniature can be inserted in a base card, each one of them can be inserted and removed independently.... Figure 7 is the schematic connection of the base card. Multiple pieces of interface transfer card 30 in miniature are all inserted on the passive base card 60. Passive base card 60 is inserted on the back plane by interface 61, which creates the corresponding connecting relationship between circuit card 10 and interface transfer card 30.

Specification filed April 5, 2001, page 8, lines 2-9 from bottom (emphasis added). Please note that with the specification, a preliminary amendment was also filed April 5, 2001. Therefore, the claim limitations "the first base card and the second base card are the same" are fully supported by the specification.

B. Examiner Did Not Carry Burden of Proof

According to MPEP, § 2163.04 "Burden on the Examiner with Regard to the Written Description Requirement", it is stated:

> A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption.... The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in

> the art would not recognize in an applicant's disclosure a description of the invention defined by the claims.

In Office Action mailed April 6, 2007, the Examiner did not present sufficient evidence or reasoning for the rejections of claims 71 and 78. As set forth above, Applicant respectfully submits that claims 71 and 78 fully comply with the written description requirement. Therefore, the rejections of claims 71 and 78 under 35 U.S.C. 112, first paragraph, should be withdrawn.

Furthermore, the rejections under 35 U.S.C. 112, first paragraph, are the only rejections for claims 71 and 78; therefore, claims 71 and 78 should be allowed.

**Claim Rejections under 35 U.S.C. § 103**

Claims 69-70, 72, 73, and 75-77 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kastenholz et al. (U.S. Application Publication No. 2006/0007946). Additionally, claim 74 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kastenholz et al. (U.S. Application Publication No. 2006/0007946) in view of Gorshe et al. (U.S. Patent No. 6,667,973). Applicant respectfully traverses all of these rejections.

A. Claim 69

With respect to claim 69, Kastenholz, alone or in combination with Examiner's other alleged prior art, does not disclose or suggest at least

> a first transfer card coupled to the first circuit card through at least a first base card and a first backplane, the first base card being coupled directly to both the first transfer card and the first backplane, the first base card being neither a part of the first transfer card nor a part of the first backplane, the first transfer card not being a part of the first circuit card, the first circuit card not being a part of the first transfer card…
> a second transfer card coupled to the second circuit card through at least a second base card and a second backplane, the second base card being coupled directly to both the second transfer card and the second backplane, the second base card being neither a part of the second transfer card nor a part of the second backplane, the second

transfer card not being a part of the second circuit card, the second circuit card not being a part of the second transfer card…
a first interface card coupled to the first switched network card through at least a third base card and a third backplane, the third base card being coupled directly to both the first interface card and the third backplane, the third base card being neither a part of the first interface card nor a part of the third backplane, the first interface card not being a part of the first switched network card, the first switched network card not being a part of the first interface card…
a second interface card coupled to the first switched network card through at least the third backplane…

Hence claim 69 is patentable over Kastenholz for at least the following reasons.

Failure to Disclose or Suggest "a first transfer card coupled to the first circuit card through at least a first base card and a first backplane, the first base card being coupled directly to both the first transfer card and the first backplane"

As presented, claim 69 recites "a first transfer card coupled to the first circuit card through at least a first base card and a first backplane, the first base card being coupled directly to both the first transfer card and the first backplane". For these claim limitations, the Examiner conceded Kastenholz fails to explicitly teach backplanes, but asserted that Kastenholz discloses a local line card 202 (used to match a first transfer card), a line card module 102 (used to match a first circuit card), and a printed circuit board (citing Kastenholz, par. 50; used to match a first base card). (Office Action mailed April 6, 2007, pages 3 and 7).

As disclosed in Kastenholz, the local line card 202 (used to match a first transfer card) is a component of the line card module 102 (used to match a first transfer card). (Kastenholz, par. 0050, lines 1-2). Additionally, the local line card 202 (used to match a first transfer card) is the printed circuit board (used to match a first base card). (Kastenholz, par. 0050, lines 2-4).

To compensate for lack of explicit teaching of the first backplane, the Examiner asserted that "it would have been obvious to one skilled in the art to include backplanes (in each

frame, in different physical locations - chassis 101 and 103), in order to provide a means for connecting the cards. (Office Action mailed April 6, 2007, page 5).

Effectively, the Examiner has argued that it would have been obvious to include a first backplane so that the local line card 202 (used to match a first transfer card) is coupled to the line card module 102 (used to match a first transfer card) through at least the printed circuit board (used to match a first base card) and a first backplane, and the printed circuit board (used to match a first base card) is coupled directly to both the local line card 202 (used to match a first transfer card) and the first backplane. The alleged reason for such addition of the first backplane appears to provide a means for connecting the local line card 202 and the line card module 102.

The Examiner's arguments fall for at least two reasons. First, as clearly disclosed by Kastenholz, the local line card 202 is a component of the line card module 102. Being a component of the line card module 102, the line card 202 is inherently connected to the line card module 102. Hence one skilled in the art would have no need to add the first backplane to connect the local line card 202 and the line card module 102. Second, even if a backplane were added in each frame work (in different locations -- chassis 101 and 103) as asserted by the Examiner, the backplane would have been added to chassis 101 to connect between different line card modules 102-116, as shown in Figure 2. This added backplane would not have coupled the line card module 102 to one of its component (i.e., the local line card 202).

Therefore, it would not have been obvious to one skilled in the art to include a backplane so that "a first transfer card coupled to the first circuit card through at least a first base card and a first backplane, the first base card being coupled directly to both the first transfer card and the first backplane". For at least the above reasons, claim 39 should be allowed.

Failure to Disclose or Suggest "the first base card being neither a part of the first transfer card nor a part of the first backplane, the first transfer card not being a part of the first circuit card, the first circuit card not being a part of the first transfer card"

As presented, claim 69 recites "the first base card being neither a part of the first transfer card nor a part of the first backplane, the first transfer card not being a part of the first

circuit card, the first circuit card not being a part of the first transfer card". For these claim limitations, the Examiner conceded that Kastenholz fails to explicitly disclose base cards, transfer cards and circuit cards not being a part of one another, but nonetheless asserted that "it would have been obvious to one skilled in the art to separate elements, in order to have distinct elements within a system." (Office Action mailed April 6, 2007, page 5). But such modification as suggested by the Examine would have rendered Kastenholz unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz, in contradiction to MPEP, § 2143.01.V and VI.

Effectively, the Examiner has argued that it would have been obvious to modify Kastenholz so that the printed circuit board (citing Kastenholz, par. 50; used to match a first base card) being neither a part of the local line card 202 (used to match a first transfer card) nor a part of the first backplane, the local line card 202 not being a part of the line card module 102 (used to match a first circuit card), the line card module 102 not being a part of the local line card 202. As disclosed by Kastenholz, the local line card 202 is a component of the line card module 102. (Kastenholz, par. 0050, lines 1-2). Hence making the local line card 202 not being a part (e.g., not being a component) of the line card module 102 would have render the line card module 102 unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz.

Also, as disclosed by Kastenholz, the local line card 202 is the printed circuit board (used to match a first base card). (Kastenholz, par. 0050, lines 2-4). Hence making the printed circuit board being not a part (e.g., being not a component) of the local line card 202 would have rendered the local line card 202 unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz.

Therefore, it would not have been obvious to modify Kastenholz to provide "the first base card being neither a part of the first transfer card nor a part of the first backplane, the first transfer card not being a part of the first circuit card, the first circuit card not being a part of the first transfer card". For at least the above reasons, claim 39 should be allowed.

Failure to Disclose or Suggest "a second transfer card coupled to the second circuit card through at least a second base card and a

second backplane, the second base card being coupled directly to both the second transfer card and the second backplane"

As presented, claim 69 recites "a second transfer card coupled to the second circuit card through at least a second base card and a second backplane, the second base card being coupled directly to both the second transfer card and the second backplane". For these claim limitations, the Examiner conceded Kastenholz fails to explicitly teach backplanes, but asserted that Kastenholz discloses an expanded interconnect board 138 (used to match a second circuit card), ASIC 410 a/b (used to match a second transfer card), and a printed circuit board (citing Kastenholz, par. 44; used to match a second base card). (Office Action mailed April 6, 2007, pages 4 and 7).

As disclosed in Kastenholz, the ASIC 410 a/b (used to match a second transfer card) is a component of the expanded interconnect board 138 (used to match a second circuit card). (Kastenholz, par. 0074, lines 5-6; Figure 5). Additionally, the expanded interconnect board 138 (used to match a second circuit card) is a printed circuit board (used to match a second base card). (Kastenholz, par. 0044, lines 11-14).

To compensate for lack of explicit teaching of the second backplane, the Examiner asserted that "it would have been obvious to one skilled in the art to include backplanes (in each frame, in different physical locations - chassis 101 and 103), in order to provide a means for connecting the cards. (Office Action mailed April 6, 2007, page 5).

Effectively, the Examiner has argued that it would have been obvious to include a second backplane so that the ASIC 410 a/b (used to match a second transfer card) is coupled to the expanded interconnect board 138 (used to match a second circuit card) through at least the printed circuit board (used to match a second base card) and the second backplane, and the printed circuit board (used to match a second base card) is coupled directly to the expanded interconnect board 138 (used to match a second circuit card) and the second backplane. The alleged reason for such addition of the second backplane appears to provide a means for connecting the ASIC 410 a/b and the expanded interconnect board 138.

The Examiner's arguments fall for at least two reasons. First, as clearly disclosed by Kastenholz, the ASIC 410 a/b is a component of the expanded interconnect board 138. Being

a component of the expanded interconnect board 138, the ASIC 410 a/b is inherently connected to the expanded interconnect board 138. Hence one skilled in the art would have no need to add the second backplane to connect the ASIC 410 a/b and the expanded interconnect board 138. Second, even if a backplane were added in each frame work (in different locations -- chassis 101 and 103) as asserted by the Examiner, the backplane would have been added to chassis 105 as shown in Figure 2. This added backplane would not have coupled the expanded interconnect board 138 to one of its component (i.e., the ASIC 410 a/b).

Therefore, it would not have been obvious to one skilled in the art to include a backplane so that "a second transfer card coupled to the second circuit card through at least a second base card and a second backplane, the second base card being coupled directly to both the second transfer card and the second backplane". For at least the above reasons, claim 39 should be allowed.

Failure to Disclose or Suggest "the second base card being neither a part of the second transfer card nor a part of the second backplane, the second transfer card not being a part of the second circuit card, the second circuit card not being a part of the second transfer card"

As presented, claim 69 recites "the second base card being neither a part of the second transfer card nor a part of the second backplane, the second transfer card not being a part of the second circuit card, the second circuit card not being a part of the second transfer card." For these claim limitations, the Examiner conceded that Kastenholz fails to explicitly disclose base cards, transfer cards and circuit cards not being a part of one another, but nonetheless asserted that "it would have been obvious to one skilled in the art to separate elements, in order to have distinct elements within a system." (Office Action mailed April 6, 2007, page 5). But such modification as suggested by the Examine would have rendered Kastenholz unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz, in contradiction to MPEP, § 2143.01.V and VI.

Effectively, the Examiner has argued that it would have been obvious to modify Kastenholz so that the printed circuit board (citing Kastenholz, par. 44; used to match a second base card) being neither a part of the ASIC 410 a/b (used to match a second transfer card) nor a part of the second backplane, the ASIC 410 a/b not being a part of the expanded interconnect board 138 (used to match a second circuit card), the expanded interconnect board 138 not being a part of the ASIC 410 a/b. As disclosed by Kastenholz, the ASIC 410 a/b is a component of the expanded interconnect board 138. Hence making the ASIC 410 a/b not being a part (e.g., not being a component) of the expanded interconnect board 138 would have rendered the expanded interconnect board 138 unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz.

Therefore, it would not have been obvious to modify Kastenholz to provide "the second base card being neither a part of the second transfer card nor a part of the second backplane, the second transfer card not being a part of the second circuit card, the second circuit card not being a part of the second transfer card". For at least the above reasons, claim 39 should be allowed.

Failure to Disclose or Suggest "a first interface card coupled to the first switched network card through at least a third base card and a third backplane, the third base card being coupled directly to both the first interface card and the third backplane"

As presented, claim 69 recites "a first interface card coupled to the first switched network card through at least a third base card and a third backplane, the third base card being coupled directly to both the first interface card and the third backplane". For these claim limitations, the Examiner conceded Kastenholz fails to explicitly teach backplanes, but asserted that Kastenholz discloses a local interconnect module 118 (used to match a first switched network card), an interconnect board 218 (used to match the first interface card), and a printed circuit board (citing Kastenholz, par. 51; used to match a third base card). (Office Action mailed April 6, 2007, pages 4 and 7).

As disclosed in Kastenholz, the interconnect board 218 (used to match the first interface card) is a component of the local interconnect module 118 (used to match a first switched network card). (Kastenholz, par. 0051, lines 1-2). Additionally, the interconnect board 218 (used to match the first interface card) is a printed circuit board (used to match a third base card). (Kastenholz, par. 0051, lines 2-4).

To compensate for lack of explicit teaching of the third backplane, the Examiner asserted that "it would have been obvious to one skilled in the art to include backplanes (in each frame, in different physical locations - chassis 101 and 103), in order to provide a means for connecting the cards. (Office Action mailed April 6, 2007, page 5).

Effectively, the Examiner has argued that it would have been obvious to include a third backplane so that the interconnect board 218 (used to match a first interface card) is coupled to the local interconnect module 118 (used to match a first switched network card) through at least the printed circuit board (used to match a third base card) and the third backplane, and the printed circuit board (used to match a third base card) is coupled directly to both the interconnect board 218 (used to match the first interface card) and the third backplane. The alleged reason for such addition of the third backplane appears to provide a means for connecting the interconnect board 218 and the local interconnect module 118.

This Examiner's arguments fall for at least two reasons. First, as clearly disclosed by Kastenholz, the interconnect board 218 is a component of the local interconnect module 118. Being a component of the local interconnect module 118, the interconnect board 218 is inherently connect to the local interconnect module 118. Hence one skilled in the art would have no need to add the third backplane to connect the interconnect board 218 and the local interconnect module 118. Second, even if a backplane were added in each frame work (in different locations -- chassis 101 and 103) as asserted by the Examiner, the backplane would have been added to chassis 103 to connect between different local interconnect modules 118-132, as shown in Figure 2. This added backplane would not have coupled the local interconnect modules 118 to one of its component (i.e., the interconnect board 218).

Therefore, it would not have been obvious to one skilled in the art to include a backplane so that "a first interface card coupled to the first switched network card through at

least a third base card and a third backplane, the third base card being coupled directly to both the first interface card and the third backplane". For at least the above reasons, claim 39 should be allowed.

Failure to Disclose or Suggest "the third base card being neither a part of the first interface card nor a part of the third backplane, the first interface card not being a part of the first switched network card, the first switched network card not being a part of the first interface card"

As presented, claim 69 recites "the third base card being neither a part of the first interface card nor a part of the third backplane, the first interface card not being a part of the first switched network card, the first switched network card not being a part of the first interface card". For these claim limitations, the Examiner conceded that Kastenholz fails to explicitly disclose base cards, transfer cards and circuit cards not being a part of one another, but nonetheless asserted that "it would have been obvious to one skilled in the art to separate elements, in order to have distinct elements within a system." (Office Action mailed April 6, 2007, page 5). But such modification as suggested by the Examine would have rendered Kastenholz unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz, in contradiction to MPEP, § 2143.01.V and VI.

Effectively, the Examiner has argued it would have been obvious to modify Kastenholz so that the printed circuit board (citing Kastenholz, par. 51; used to match a third base card) being neither a part of the interconnect board 218 (used to match the first interface card) nor a part of the third backplane, the interconnect board 218 not being a part of the local interconnect module 118 (used to match a first switched network card), the local interconnect module 118 not being a part of the interconnect board 218. As disclosed by Kastenholz, the interconnect board 218 is a component of the local interconnect module 118. (Kastenholz, par. 0051, lines 1-2). Hence making the interconnect board 218 not being a part (e.g., not being a component) of the local interconnect module 118 would have render the local interconnect

module 118 unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz.

Also, as disclosed by Kastenholz, the interconnect board 218 is a printed circuit board (used to match a third base card). (Kastenholz, par. 0051, lines 2-4). Hence making the printed circuit board being not a part (e.g., being not a component) of the interconnect board 218 would have render the interconnect board 218 unsatisfactory for its intended purpose and/or change the principle of operation of Kastenholz.

Therefore, it would not have been obvious to modify Kastenholz to provide "the third base card being neither a part of the first interface card nor a part of the third backplane, the first interface card not being a part of the first switched network card, the first switched network card not being a part of the first interface card". For at least the above reasons, claim 39 should be allowed.

Failure to Disclose or Suggest "a second interface card coupled to the first switched network card through at least the third backplane"

As presented, claim 69 recites "a second interface card coupled to the first switched network card through at least the third backplane". For these claim limitations, the Examiner conceded Kastenholz fails to explicitly teach backplanes, but asserted that Kastenholz discloses an interconnect board 220 (used to match a second interface card) and the local interconnect module 118 (used to match a first switched network card). (Office Action mailed April 6, 2007, pages 4 and 7). As disclosed in Kastenholz, the interconnect board 220 (used to match a second interface card) is a component of the local interconnect module 118 (used to match a first switched network card). (Kastenholz, par. 0051, lines 1-2).

To compensate for lack of explicit teaching of the third backplane, the Examiner asserted that "it would have been obvious to one skilled in the art to include backplanes (in each frame, in different physical locations - chassis 101 and 103), in order to provide a means for connecting the cards. (Office Action mailed April 6, 2007, page 5).

Effectively, the Examiner has argued that it would have been obvious to include the third backplane so that the interconnect board 220 (used to match a second interface card) is coupled to the local interconnect module 118 (used to match a first switched network card) through at least the third backplane. The alleged reason for such addition of the third backplane appears to provide a means for connecting the interconnect board 220 and the local interconnect module 118.

This Examiner's arguments fall for at least two reasons. First, as clearly disclosed by Kastenholz, the interconnect board 220 is a component of the local interconnect module 118. Being a component of the local interconnect module 118, the interconnect board 220 is inherently connect to the local interconnect module 118. Hence one skilled in the art would have no need to add the third backplane to connect the interconnect board 220 and the local interconnect module 118. Second, even if a backplane were added in each frame work (in different locations -- chassis 101 and 103) as asserted by the Examiner, the backplane would have been added to chassis 103 to connect between different local interconnect modules 118-132, as shown in Figure 2. This added backplane would not have coupled the local interconnect modules 118 to one of its component (i.e., the interconnect board 220).

Therefore, it would not have been obvious to one skilled in the art to include a backplane so that "a second interface card coupled to the first switched network card through at least the third backplane". For at least the above reasons, claim 39 should be allowed.

B. Claims 70 and 71

Claims 70 and 71 each depend upon claim 69. Hence claims 70 and 71 are allowable for substantially the same reason as claim 69, and more particularly for the specific features they recite.

C. Claim 72

Based on at least reasons that are similar to some reasons for claim 69, Kastenholz, alone or in combination with Examiner's other alleged prior art, does not disclose or suggest at least

> a first transfer card coupled to the first circuit card through at least a first backplane, the first transfer card not being a part of the first circuit card, the first circuit card not being a part of the first transfer card…
> a second transfer card coupled to the second circuit card through at least a second backplane, the second transfer card not being a part of the second circuit card, the second circuit card not being a part of the second transfer card…
> a first interface card coupled to the first switched network card through at least a third backplane, the third backplane and the first backplane being associated with different physical locations, the first interface card not being a part of the first switched network card, the first switched network card not being a part of the first interface card…
> a second interface card coupled to the first switched network card through at least the third backplane…

Hence claim 72 should be allowed.

D. Claim 74

Claim 74 depends upon claim 72. This claim is allowable for substantially the same reason as claim 72, and more particularly for the specific features it recites.

For example, claim 72 recites that "a first switched network card to at least perform an exchange function between the first circuit card and the second circuit card", and claim 74 recites "a second switched network card coupled to both the first interface card and the second interface card". (emphasis added).

In Office Action mailed April 6, 2007, the Examiner conceded that Kastenholz fails to disclose a second switched network card coupled to both the first interface card and the second interface card, but nonetheless asserted that in view of Gorshe, "it would have been obvious to one skilled in the art to modify Kastenholz's system by including a second switched network card, in order to provide a back-up switched network card for interconnecting the interface cards."

In Office Action mailed April 6, 2007, the Examiner has asserted that Kastenholz discloses the local interconnect module 118 (used to match a first switched network card), the

interconnect board 218 (used to match a first interface card), and the interconnect board 220 (used to match a second interface card). As disclosed by Kastenholz, both the interconnect boards 218 and 220 are components of the local interconnect module 118. (Kastenholz, par. 0051, lines 1-2).

Hence, the Examiner has effective argued that in view of Gorshe, it would have been obvious to include a second switched network card, in order to provide a back-up switched network card for the local interconnect module 118 (used to match a first switched network card), for interconnecting the interconnect board 218 (used to match a first interface card) and the interconnect board 220 (used to match a second interface card).

This Examiner's arguments fall for at least the following reason. As asserted by the Examiner, the local interconnect module 118 (used to match a first switched network card) is used to at least perform an exchange function between the line card module 102 (used to match a first circuit card) and the expanded interconnect board 138 (used to match a second circuit card). Hence, even if a second switched network card were added as a back-up switched network card, the second switched network card would have been coupled to the line card module 102 and the expanded interconnect board 138. There would have been no need for one skilled in the art to couple the second switched network card to the interconnect boards 218 and 220, both which are components of the local interconnect module 118 (used to match a first switched network card).

Therefore, Kastenholz and Gorshe do not, alone or in combination, teach or suggest "a second switched network card coupled to both the first interface card and the second interface card". For at least these additional reasons, claim 74 should be allowed.

E. Claims 73 and 78

Claims 73 and 78 depend upon claim 72, and are allowable for substantially the same reason as claim 72, and more particularly for the specific features they recite.

**New Claims 79-96**

With respect to new claims 79-96, Applicant respectfully submit the technology of the present invention is different from Kastenholz's disclosure according to certain embodiments.

A. Technical Issues to be Solved

Specifically, referring to page 1, paragraph [0006], Kastenholz discloses:

> Because conventional systems fail to provide a single switch routing network that can operate on a variety of protocols, today's Giga Points-of-Presence (Giga PoPs) and Access PoPs are a complex and expensive aggregation of core routers connecting smaller Access PoPs to the core transport capacity. These structures are fragile, with frequent service outages due to performance limitations and equipment failures. Enterprises cannot afford to be exposed to significant down time due to failures or updates associated with conventional technology.

Hence one technical problem for Kastenholz to solve appears to be the stabilization of Giga node. Because an object of Kastenholz's technology is the stabilization of Giga node and update, so the capacity supports GBits capacity.

In more detail, referring to page 2, paragraph [0013], Kastenholz discloses:

> An interconnect network according to another embodiment of the invention enables a communication node to act as both a native ATM switch and a native IP router, operating at line speeds up to at least as high as 2.488 Gps (OC48c STM16c)", operating at line speed at 2.488Gps.

Also, referring to page 2, paragraph [0015], Kastenholz discloses:

> According to another embodiment, the communication node is packaged in a scalable set of modules. 0C48 line cards and Gigabit Ethernet modules populate a local communication interface module including a local interconnect network. An optional front end access module provides fan out to 0C12 STM4, 0C3 STM1, D53, or E3 interfaces, and an optional expanded interconnect module, sometimes referred to as a hyper connect fabric, allows dynamic bandwidth expansion of the communication node to

include up to eight interconnected local interconnect modules, thereby providing 160 Gbs of essentially non-blocking bandwidth.

Hence according to Kastenholz, a communication node provides 160Gbs of bandwidth.

In contrast, an object of the present invention is to provide a communication node which can implement smooth capacity expansion from Gbit to Tbit, or even higher, according to certain embodiments. When capacity is expended, the original equipment can also be used. As disclosed in page 1, paragraph [0006] of U.S. Application Publication No. 2001/0021955 (which corresponds to the present application), "The present invention provides a method to implement smoothly capacity expansion for products of data communication, and a smooth capacity expandable system for data communication. It implements smooth capacity expansion from Gbit to Tbit. When capacity is expended, the original equipment can also be used and the client investment is protected".

Certain embodiments of the present invention and Kastenholz's technology may be related, but some embodiments of the present invention can implement smooth capacity expansion from Gbit to Tbit, which does not appear to have been realized by Kastenholz's technology.

B. Technical Solutions

Referring to the claim 1 in Kastenholz, "a selectable number of local interconnect modules located proximate to each other and each having local transfer elements for transferring information between a plurality of local I/O channels and for transferring information between said plurality of local I/O channels and a plurality of non-local I/O channels, and an expanded interconnect module located proximate to said local interconnect modules and having coupling means for electrically coupling to said non-local I 0 channels, and expanded transfer elements for transferring information between said local interconnect modules".

Hence, Kastenholz appears to disclose a two-level interconnect architecture, which includes local interconnect module and expanded interconnect module. The expanded

interconnect module provides two-level expanded interconnect. Simultaneously, the expended architecture for internal communication (inside the communication node) is based on coupling of electrical signals.

Specifically, referring to pages 7-8, paragraph [0070], Kastenholz discloses:

> According to a preferred embodiment, the modular construction of the line card modules 102-116, along with the modular construction of the local interconnect modules 118-132, in combination with the expanded interconnect module 134 provides the scalable feature. More specifically, as indicated in FIG. 2, according to the illustrated embodiment 100, a first mechanical chassis 101 houses up to eight local line card modules 102-116. Similarly, a second mechanical chassis 103 houses up to eight local interconnect modules 118-132. Further, a third mechanical chassis 105 houses the extended interconnect network 134. The first mechanical chassis 101 electrically couples to the second mechanical chassis 103 by way of communication channels 142-160. The second mechanical chassis 103 electrically couples to the third mechanical module 105 by way of communication channels 170. The communication node 100 employs connectors designed for "hot-swapping" at module interfaces. Those connectors enable the local line card modules 102- 116, the local interconnect modules 118-132, and the expanded interconnect boards 136-140 to be connected and unconnected (i.e., "hot-swapped") from their respective mechanical chassis 101, 103 and 105, while the communication node 100 is powered and operating transferring information. Thus, as a service provider requires additional bandwidth, additional local line card modules 102-116, with associate additional local interconnect modules 118-132 can be "plugged in" to chassis 101 and 103, respectively.

Hence, according to Kastenholz, the local interconnect module 118 and the line card module 102 appear connected through electrical signals.

Additionally, referring to page 4, paragraph [0044], Kastenholz discloses:

> FIG. 2 shows a block diagram of a communication node 100 incorporating interconnect networks according to an illustrative embodiment of the invention. The communication node 100 employs a two-level interconnect architecture. Accordingly, the node 100 includes one or more local line card modules 102-116, each having first-level associated local interconnect modules 118-132. In the case where the node 100 includes more than one local line card modules, the

> communication node 100 further includes a second- level expanded interconnect module 134, sometimes referred to as a hyper connect fabric. The illustrated expanded interconnect module 134 includes three expanded interconnect boards 136-140.

Hence, Kastenholz appears to disclose a two-level interconnect architecture.

In contrast, one-level interconnection architecture provided by certain embodiments of the present invention is different from two-level interconnection architecture provided by Kastenholz. Referring to page 2, paragraph [0026] of U.S. Application Publication No. 2001/0021955 (which corresponds to the present application), Applicant discloses:

> The invention solves the interconnection between frameworks by using the interface transfer card, interface card of switched network and optical fiber. It has broken limitation of a framework space and volume, and makes capacity expansion is possible. When the capacity is expanded, it keeps all original circuit cards and switched network cards unchanged; in this way, client investment is protected and the cost of upgrade and capacity expansion is decreased greatly.

Hence, according to certain embodiments, the transfer card, the interface card, and the optical fiber adopted by the present invention, and the interconnection between frameworks of the present invention are not disclosed or suggested by Kastenholz.

Specifically, according to some embodiments of the present invention, the internal information of the transfer card, the interface card, the circuit card, and the switched network card is standard internal information. For example, the mechanical structures of the transfer card, the interface card, the circuit card, and the switched network card are substantially the same, even though these cards are configured to perform different optical and/or electrical functions. Therefore, these cards can be exchanged from the mechanical perspective, and it is convenient to implement smooth capacity expansion from Gbit to Tbit according to certain embodiments.

In contrast, in Kastenholz, the expansion of level-one local interconnect modules appears to have been implemented by increasing level-two expanded interconnect modules. The

expanded interconnect module and the local interconnect module are of different types. These two levels do not appear to be directly exchanged.

C. Technical Performance

Referring to page 4, paragraphs [0041] and [0042], Kastenholz discloses:

> ... a communication node, embodying features of an illustrative embodiment of the invention, can process information entering the node at a variety of speeds and formatted pursuant to a plurality of protocols. By way of example, information can enter and leave the communication node at 0C48, 0C12/STM4, 0C3/ STM1, D53 and E3 speeds. Additionally, information can enter and leave the node in IP- or ATM-based formats. Another important feature of the invention is dynamic bandwidth scalability. A communication node employing interconnection networks according to an illustrative embodiment of the invention, employs a modular design. The modular design enables a service provider to change the number of communication channels by adding or subtracting physical proximately located modules to or from the communication node. According to a preferred embodiment, the modules include a plurality of I/O interfaces coupled to an associated interconnection network. In a further embodiment of the invention, the communication node employs a two-level interconnection network modularity; a local level and an expanded level. More particularly, a plurality of local interconnection network modules, preferably proximately located with respect to each other ...

Therefore, Kastenholz's technology appears to support various kinds of external protocols. Additionally, Kastenholz attempts to implement two-level interconnection network modularity for bandwidth scalability, and achieve Gbits transmission capability.

In contrast, certain embodiments of the present invention use one-level exchange system and the same standard for internal interfaces. For example, smooth capacity expansion from Gbit to Tbit can be implemented by connecting multiple frameworks through optical fibers, and such capacity expansion cannot be achieved by Kastenholz.

D. Response to Examiner's Reasoning

The optical fiber, even if disclosed or suggested by Kastenholz, appears to be an external optical fiber. Kastenholz discloses "SONET I/0 port" (page 5, paragraph [0050]) and "Gigabit" (page 8, paragraph [0073]). Additionally, referring to page 4, paragraph [0041], Kastenholz also discloses:

> ... a communication node, embodying features of an illustrative embodiment of the invention, can process information entering the node at a variety of speeds and formatted pursuant to a plurality of protocols. By way of example, information can enter and leave the communication node at 0C48, 0C12/STM4, 0C3/ STM1, D53 and E3 speeds. Additionally, information can enter and leave the node in IP- or ATM-based formats ...

Hence, the interface as disclosed or suggested above by Kastenholz appears to correspond to an external interface according to certain embodiments of the present invention. Therefore, the optical fiber, even if disclosed or suggested by Kastenholz, is different from the internal optical fiber channel for capacity expansion provided by certain embodiments of the present invention.

Overall, Kastenholz fails to disclose or suggest the following technical features provided by some embodiments of the present invention:

1. Solving issues about interconnection between frameworks by using transfer card, interface card, and optical fiber. For example, such solution has overcome limitations on space and volume imposed by a framework.

2. When the capacity is expanded, keeping original circuit cards and switched network cards unchanged.

3. Achieving smooth capacity expansion by increasing the number of circuit card frameworks that are interconnected.

4. Integrating a plurality of transfer cards in a base card.

5. Dynamically expanding capacity of one-level switched system.

6. Using transfer cards and interface cards that include internal interfaces (e.g., including internal electrical interfaces), which are the same as ones of circuit cards and switched network cards. For example, the transfer cards, the switched network cards and the interface cards includes the same interfaces mechanically as the interfaces of the interface cards.

Furthermore, the deficiency of Kastenholz cannot be cured by Gorshe. For example, in Gorshe, HSU appears to be a high-speed interface card, which does perform the switch function of a network card as provide by certain embodiments of the present invention.

## CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



Daniel Mao
Reg. No. 51,995

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300
DM:ejt
61091644 v4